California Partnership for the San Joaquin Valley
Telecommunications Work Group
Strategic Action Proposal
September 2006

I. Mission Statement

The mission of the Telecommunications Work Group is to facilitate the deployment and utilization of advanced communications services throughout the region.

II. Background

A. Scope Adopted by Partnership

- Work with the CPUC to develop accurate maps that reflect actual existence of high-speed broadband access.
- Develop an action plan to provide at least one mode of affordable, universal high-speed broadband access to all unserved areas of the region (based on reviewing and considering recommendations of the Ad Hoc Task Force on Rural Telecommunications).
- Develop standards for high school technology literacy and ensure all graduating students achieve such proficiency.
- Identify innovative models that are replicable in communities throughout the region to provide public access and community development using technology.
- Identify and/or create business services that can be used to strengthen and grow home-based businesses in rural areas in order to increase the demand side of telecommunications access by growing small business, increasing wealth and generating jobs.

B. Background on Advanced Communications Services in the San Joaquin Valley

There is universal agreement among economic developers, businesses and investors that utilization of advanced communications services (ACS) is an essential part of doing business and accessing services in the 21st century. The global market, information dissemination, education, health care and governmental emergency notification procedures increasingly rely on high speed access. In spite of great progress and rapid deployment in some areas, affordable ACS is not universally available in all areas of the region. (ACS is utilized throughout this report as it includes any retail service, regardless of transmission medium or technology, that is capable of originating and receiving data transmissions for the purpose of accessing the Internet and can do so with a speed of at least 200 kilobits per second in the last mile in one direction and with a speed of at least 128 kilobits a second in the last mile in the opposite direction.)

Rural communities and isolated areas are especially underserved. Barriers to use exist even in areas which do have access. Training and education in computer and Internet use and opportunities are an integral part of improving the benefits of access for economic renewal and educational attainment.

Communities without access to ACS will remain economic, educational and social backwaters. Individuals without Internet access and skills are denied opportunities and tools for advancement which, in many cases, cannot be replicated in other ways.

Current data does not accurately portray the availability of ACS. The California Public Utilities Commission (CPUC), in its recent report, published a map that shows broadband access by zip code. Based on the data in the map, one might conclude that access is available in virtually all areas of the state. The flaw in the analysis is that, particularly in rural areas, a zip code covers large areas with sometimes sparse populations, and so while a city like Tulare might have broadband access, the community of Pixley (pop. 2,500), just 20 miles away, is without public access, though they are both in the same zip code.

C. General Goal of Work Group

The Telecommunications Work Group of the Partnership was supported by the Great Valley Center, and coordinated with the CPUC, advocates, providers and user groups. The purpose before the Work Group was two-fold – identify strategies to:

- Expedite access to ACS in all areas of the San Joaquin Valley.

- Promote greater utilization of ACS in targeted populations and communities that currently trail the state average.

Surveys taken by the Public Policy Institute of California show a clear digital divide within regions and populations in California. Their surveys clearly indicate the more rural the community, the less access and the less Anglo and less affluent the community, the lower the use of the Internet, even if access does exist. Community Technology Centers and other public access sites provide some assistance in some communities but the amount of training and support, especially in rural areas, is inadequate. The ability of the region to prosper economically depends on educational literacy, and increasingly on the technological literacy of all segments of the population.

D. San Joaquin Valley Focus

In spite of the statewide need for ubiquitous access, the opportunity and the need exist to develop a program to provide access and increase use within the underserved San Joaquin Valley. There is an opportunity to initiate and test a California model in a geographic area relatively free from physical barriers and one that is small enough such that the model's goals are achievable.

III. Goals and Objectives

A. Narrative

The recommendations within this report are not intended to be exhaustive or prescriptive, but rather to underscore important issues and suggest possible strategies to make progress in assuring ubiquitous access throughout the region.

Initially it was thought that foundational to improving deployment of ACS would be the development of a regional map depicting where infrastructure to deliver service is in place and operational versus where it is not. However, in analyzing the logistics of producing such a map and keeping it current, it was determined this is not necessarily a practical method for informing deployment. There also is discrepancy over the definition of broadband and likewise the definition of access. These concerns were summarized by the CPUC in a white paper entitled *Mapping Broadband Access*:

Mapping broadband access would be a complicated and inefficient exercise.

- There is no clear definition of the term "broadband". There are perhaps as many definitions of broadband as there are organizations and countries that have attempted to define it.

    - Broadband can refer to connection speed (bandwidth) and it can refer to the set of advanced technologies and services, such as DSL, FTTx, fixed wireless, wireless, LANS, cable modem, satellite modem and/or emerging technologies such as broadband over power lines (BPL). However, since broadband technologies and services are rapidly advancing and Internet access speeds are continuing to increase, the definition of broadband also continues to evolve.

    - The Committee on Broadband Last Mile Technology, an expert group assembled by the National Academy of Sciences, called 200 Kbps "at best, a lowest common denominator" and added that setting any minimum speed threshold is "unwise over the long run". The International Telecommunications Union, a global standards-setting body, defined broadband as a "transmission capacity that is faster than primary rate Integrated Services Digital Network (ISDN) at 1.5 or 2.0 Mbps."

    - The Organization for Economic Cooperation and Development considers downstream access of 256 Kbps (with 128 Kbps upstream) as broadband. The Canadian National Broadband Task Force (CNBTF), in formulating its definition of the term "broadband," noted that among the 14 countries that were surveyed, national definitions of the term ranged from as low as 2 Mbps to as high as 30 Mbps.

        - Taking a more functional approach to definition, the CNBTF decided not to define broadband in terms of information transmission rates, but instead defined it as "a high capacity, two-way link between end users and access network suppliers capable of supporting full-motion interactive video applications to all Canadians on terms comparable to those available in urban markets."

        - Based on the technology existing at the time, CNBTF concluded that a minimum two-way or symmetrical transmission speed of 1.5 Mbps per individual user was required to meet this standard. In the future, the CNBTF predicted, speeds of up to 4 to 6 Mbps would be required to handle emerging applications such as peer-to-peer video file sharing and video conferencing.

- Section 706 reports are the FCC's primary national reporting mechanism on the state of ACS. For its first Section 706 Report published August 2000, the FCC chose 200 Kbps downstream and upstream as the broadband definition threshold. As of 2005, after realizing the increasing demand and availability of greater bandwidth, the FCC is now requiring carriers to report on five different broadband speed categories and ten different broadband technology types.

- The definition of access is inexact. Availability of broadband service for purchase does not necessarily mean that it is "accessible". For example, the digital divide exists in California, even as we lead the country in broadband penetration.

  - Critical broadband infrastructure may be in place but broadband *per se* may not be accessible, in particular, to non-English language consumers, low-income persons and persons with disabilities.

  - Universal design and cost supports for broadband equipment and services must factor into the determination of access.

- Any map of broadband access would quickly be out of date**.** Maps are only as good as the underlying data and companies expand their networks on a daily basis. Further, broadband data is not readily or easily obtained.

  - An attempt to develop a database of broadband access would necessarily require the cooperation of service providers which are not regulated as public utilities.

    - Few broadband providers have elected to respond to previous CPUC requests for information. Very likely, most will decline to comply with any such future requests of information.

  - At best, a data collection effort would face complications and delays. The report would be available twelve to twenty months after the submittal of the requested information.

- Available data needed to produce broadband maps is limited and does not convey sufficient information for efficient and intelligent decision-making.

  - The FCC Form 477 data only reports broadband availability by zip code. The PUC used this data to produce maps for the May 2005 Broadband Report. Accordingly, entire zip codes were characterized as having broadband access, even if only a part of the particular zip code had such availability.

  - Reliance on those maps may have had the completely opposite and unintended consequence of diverting public and/or private deployment resources from localities in great need but lacking broadband access.

  - It is not clear how such maps would contribute materially to more access to broadband or to better public policy decisions.

These observations point to the problems inherent in a statewide methodology for mapping access to ACS. However, they do not eliminate the need for accurate information if access is to ever truly be ubiquitous. Therefore this report continues to maintain the importance of assessing access and the barriers to full deployment and use of these emerging technologies.

One method for obtaining access data is suggested in Goal #1, Objective C. This example of analyzing availability, affordability, and use of ACS suggests it be accomplished at a more local level and compiled on a regional basis in recognition that access information is foundational to creating implementation strategies. It is intended that this be accomplished in concert with local leaders, community-based organizations, advocacy groups, providers, and regulators. This partnership among stakeholders should be seen as a way to foster increased integration of communications services within the daily lives of all residents, resulting in economic and social gains for individuals and business alike.

While potential technical implementers and partners for each objective have been identified, it is intended that the Partnership itself, in whatever form it takes, should continue to shepherd the advancement of the high speed access goals. Implied in this is an understanding that current Partnership staffing organizations such as Great Valley Center (GVC), Fresno Regional Jobs Initiative (RJI), and California State University, Fresno (CSUF) will continue to play a vital role in supporting the Partnership and others as they implement the recommendations. Additionally, it was the Governor who initially recognized the needs within the San Joaquin Valley and structured a process by which they could begin to be addressed. Therefore, it is the hope of those who have worked on this effort that he, and subsequent governors, will continue to play a fundamental role in moving forward the agenda.

With the Governor and the Partnership serving as a foundation for future efforts, the California Public Utilities Commission is identified as the primary technical implementer, especially where the Commission has jurisdiction over the relevant products and services. Particularly in the areas not subject to CPUC regulation, it is recognized the CPUC will need many partners and significant resources, both public and private, to accomplish what is set forth below as recommendations. While some potential partners have been named, it is clear many additional organizations, agencies, businesses, and individuals will need to be mobilized to address the ACS challenges of the region. One key partner may be the California Emerging Technology Fund (CETF), which is just now beginning to develop its strategic plan.

Because of the need to involve a wide range of interested parties, it is recommended that the establishment of a San Joaquin Valley Regional Advanced Communications Services Office (RACSO) be considered as a method of focusing ACS access efforts within the Valley. How this would be structured, if implemented, is the subject of future deliberations. However, for the purpose of this report, the concept is included within each objective as a placeholder term to represent the coordinated interests of stakeholders.

Whether virtual or actual, housing all San Joaquin Valley ACS efforts in one place, with central coordination, may help prevent redundancy and allow for more efficient alignment of effort. Because involvement of all affected parties, from providers to regulators to the public, is integral to success of the recommendations, centralizing regional ACS initiatives could assist the CPUC and CETF in coalescing and integrating interests, particularly with services not subject to CPUC jurisdiction. This

approach would also enable a central ACS indicators report to be tailored to the Partnership work plan, evaluating and monitoring the effectiveness of implemented recommendations through objective-specific metrics.

A complete list of all referenced background information is included as an attachment to this report. It is acknowledged many additional, equally credible reports and documents exist and should be considered as efforts more forward in coming years.

Three basic recommendation pieces set a context for the overall Work Group discussions. They are:

Availability of Advanced Telecommunications Capability in the United States, Federal Communications Commission September, 2004

Broadband Deployment in California, California Public Utilities Commission May 2005

Rural Highspeed Access – Obstacles & Opportunities, Great Valley Center August 2004

A status matrix reflecting progress on recommendations within the Broadband Report as of May 2006 is also included within the background information. Also included is a legislation matrix prepared by Eric Johnson of AT&T and Margaret Felts of CalCom to address how a current assembly bill, AB2987, attempts to address CPUC Broadband Deployment Report recommendations.

1. Goal 1: Expedite the provision of ACS access in all areas of the San Joaquin Valley.

a. Metrics

- Number of state agencies, boards and commissions with goals, objectives, and strategies for expansion of ACS access in place for internal and client use.
- Number of local communities with adopted ACS access policies in place.
- Development of an integrated and easy-to-update GIS mapping system depicting availability of "affordable" ACS.
- Appropriate re-classification of areas within the region as rural and remote rural.
- Number of communities awarded assistance and demonstrating access progress.
- Utilizing GIS mapping system from Goal #1, Objective C, document improvement to baseline in subscription to ACS.
- Additional modes of transmission are in use.
- Cases of installation barriers will diminish over time.
- RTIGB funds are fully expended.
- While respecting the need for reserves, a decrease in unused bandwidth can be documented and new user partnerships cited.
- Inclusion of ACS infrastructure within new commercial and residential construction will be a customary part of the "wiring" package.

b. Objectives

- **<u>Objective A:</u> Raise the profile of access to ACS as a fundamental and necessary service for all residents and businesses.**

This can be done by elevating an ACS strategy at the highest State government levels. This includes establishment of a comprehensive state strategy for ACS backed by the Governor.

- **<u>Objective B:</u> Enable local elected officials to better understand the benefits of ubiquitous access to ACS and enable them with the tools to help facilitate deployment.**

  Under the advisement of the PUC and in collaboration with providers and the California School Boards Association (CSBA), the California State Association of Counties (CSAC), the League of California Cities (LCC), and the California Cities, County, School Partnership (CCS) a primer should be developed for use by local elected officials and their staff. The primer would provide information about the importance of access, community assessment tools, and ways to increase access through technology centers, negotiations with providers, and other relevant mechanisms.

- **<u>Objective C:</u> Identify communities/pockets/neighborhoods without "affordable" connections to delivery of ACS.**

  A survey tool should be developed and administered to households and businesses to develop a general benchmark/overview of where "affordable" ACS, of any type or technology, is available. What is "affordable" should be determined based on current research of local demographics, consumer purchasing studies and range of technology options.

- **<u>Objective D:</u> Increase delivery of "affordable" ACS in rural and other underserved areas.**

  When addressing the needs of "rural" areas in the San Joaquin Valley, it should be noted these areas may be in close proximity to urban/suburban development and may not have all the same technology challenges as "remote rural" areas. Both classifications should be utilized and strategies customized appropriately. Also, a *Technology Opportunity Zone Program* with the following components should be established to assist underserved areas:

  - A process which allows a community to self-nominate for the program.
  - A provision that allows service providers to take nominations forward on behalf of communities. Providers could nominate those communities with resident populations least likely to fully comprehend the economic advantages of new technologies and, therefore, least likely to self-nominate.
  - An evaluation process that includes an assessment of needs for nominated communities and an action plan approved by the agency overseeing the program.
  - An opportunity to include community training, educating community members on both the potential prospects new technologies can offer and in the use of these technologies. Providing funding for training in rural schools and community centers would be a valuable component to the training.
  - Oversight of the program within an applicable structure, such as housing it within the California Emerging Technologies Fund (CETF) Board of Directors.

- **<u>Objective E:</u> Increase deployment of ACS by current and potential service providers.**

It is recommended the Governor and the CPUC, in conjunction with CETF, CSBA, CSAC, and LCC, encourage expansion of ACS deployment by all current and potential providers.

- **<u>Objective F:</u> Increase deployment through wired, fixed wireless, wireless, and other available technologies.**

  In recognition that there is no one technology solution, utilization of all technologies for ACS deployment should be encouraged, such as expanding cable to accommodate ACS access, expanding wireline, expanding satellite utilization, and implementing emerging solutions such as Broadband over Power Lines (BPL).

- **<u>Objective G:</u> Eliminate installation barriers that discourage deployment.**

  The CPUC should inventory all installation barriers in place that discourage deployment and work with stakeholders to minimize these barriers. In an effort to establish a check and balance system, it must be clearly demonstrated how streamlining the regulatory process will result in greater deployment within under/unserved areas. The methodology for measuring the anticipated increase in deployment must be sound and implemented on an ongoing basis. Note - the following examples have already been developed by the Work Group:

  - Example 1: Streamline permitting processes and impose approval deadlines. Establish time limits for municipalities to deny or approve right-of-way permit applications. Offer service providers some certainty on costs associated with permitting and applications and simplify their assessments on the ability to provide service facilitating actual delivery dates for service.
  - Example 2: Reduce the time period for Caltrans to act on permit requests and address current Caltrans policy of charging for non cost-based compensation. First, notify Caltrans its current operational policy of charging for non cost-based compensation was cited by providers as a significant implementation hurdle. It has been suggested this policy could be changed administratively. Second, work with the legislature to pass legislation that would provide a process and timeline for permit requests conducive to moving projects forward in a timely manner, within the necessary permitting requirements.
  - Example 3: Provide certainty and consistency within the regulatory process.

- **<u>Objective H:</u> Assure all available funding for deployment of ACS is utilized.**

  California Assembly Bill (AB) 140 (Ch. 903, Stats. 2001) and AB 2758 (Ch. 767, Stats. 2004) created the Rural Telecommunications Infrastructure Grant Program (RTIGP). The first of its kind in the nation, the program provides grants of up to $2.5 million per project, with total grant funding of $10 million per year, for construction of telecommunications infrastructure for basic telecommunications service to communities currently without telephone service. The CPUC administers the program, awards the grants, and oversees the distribution of grant funds through a contracts process. Funding is derived from either the California High Cost Fund A or B. The fund has never been fully utilized to the $10 million annual level as the cost of project implementation often is significantly higher than the current cap on grant applications resulting in very few

applications being submitted. Additionally, there is an inability to carry over funds and the program itself will sunset January 1, 2009.

- **<u>Objective I:</u> Leverage unused bandwidth for the benefit of the greatest number of users.**
  Unused bandwidth should be leveraged by recognizing the advantages and incentivizing implementation of "anchor tenancy" and "demand aggregation initiatives."

- **<u>Objective J:</u> Equip all new development with ACS accessibility.**
  Incentives that encourage new construction to be "ACS ready" should be provided. Zoning and building codes that favor ACS deployment should be promoted in all new construction.

2. Goal 2: Promote greater utilization of ACS in targeted populations and communities that currently trail the state average.

a. Metrics

- The CETF Board of Directors will allocate funds for adoption of broadband and education components.
- Access to and use of ACS will increase because of the efforts of local elected officials.
- High school students will graduate with computer literacy skills and will obtain a "Computer Driving Permit."
- The number of public locations where individuals and businesses can access and utilize ACS will increase.

b. Objectives

- **<u>Objective A:</u> Increase utilization of ACS by all residents.**
  In recognition that while ubiquitous access to ACS necessitates service delivery infrastructure and hardware, adoption and education are essential components to closing the "Digital Divide." Therefore, the California Emerging Technology Fund Board of Directors should be requested to include the integration of adoption and education components within the focus of their granting program.

- **<u>Objective B:</u> Improve local elected officials' understanding of the importance of every facet of access for all residents and businesses they serve.**
  Ongoing research to monitor, measure and report on the continuing and evolving relationship between ACS access and economic success, educational attainment, healthcare, government participation and other quality of life issues should be developed and implemented. Local elected officials should be equipped with an understanding of this connection so they can become advocates for ubiquitous access within the communities they serve.

- **<u>Objective C:</u> Equip all high school graduates with the basic computer skills necessary to perform in today's job market.**
  The California Department of Education, educators, CSBA, CENIC, the private sector, community-based organizations, and post-secondary schools should work together to develop high school computer literacy standards.

- **<u>Objective D:</u> Expand the number of public locations for access to ACS to help accommodate residents and businesses unable to provide themselves with private access.**

  The California Teleconnect Fund should be amended to ensure funding is provided to community-based organizations for upgrades and additional installations, as well as new installations. SB 720 (Ch. 531, Stats. 2003) established a $3 million program within the CPUC to provide discounts for the installation of high speed internet services for community-based organizations. Language in SB 720 appears to limit the funding to "one-time installations for entities that do not have access." As community-based organizations may need to upgrade or add additional lines to systems in order to keep them current and at appropriate capacity, support should be given to efforts that would clarify that the $3 million can be used by said organizations to upgrade existing systems or install additional.

3. Goal 3: Enhance proliferation of successful ACS implementation, access, and use models.

a. Metrics

- Increase in the number of residents and businesses utilizing ACS through replication/modification of models.

b. Objectives

- **<u>Objective A:</u> Increase public access and community development, and identify and/or create business services that can be used to strengthen and grow home-based businesses in underserved and disadvantaged areas in order to increase the demand side of ACS access through growing small businesses, generating jobs, and thereby increasing wealth.**

4. Goal 4: Utilize eHealth tools to improve access to state-of-the-art health care and healthcare services

a. Metrics

- Utilized eHealth services for improved access to care.

b. Objectives

- **<u>Objective A:</u> Improve the current and future health of residents by utilizing ACS to enable them to benefit from health care advances regardless of their proximity to services, mobility, or economic status.**

B. At-A-Glance Matrix

Telecommunications
Work Plan Actions

Mission Statement

Facilitate the deployment and utilization of advanced communications services throughout the region.

Metrics: See metrics listed below with each goal.

Indicators: Increase in number of state agencies, boards, commissions with goals objectives, and strategies for expansion of advanced communications services (ACS) access in place for internal and client use. Completed development of an integrated and easy-to-update GIS mapping system depicting availability of "affordable" ACS. Increase in number of communities utilizing GIS mapping systems from Goal #1, Objective C document improvement to baseline in subscription to ACS. Increase in number of additional modes of transmission in use. Decrease in unused bandwidth. Decrease in cases of installation barriers. Increase in portion of TRIGB funds. Increase in number of new user partnerships. Increase in number of new commercial and residential construction projects that include ACS infrastructure as a customary part of the "wiring" package. Increase in amount of funds allocated by the CETF Board of Directors for adoption of broadband and education components. Increase in the level of access to and use of ACS due to efforts of local elected officials. Increase in number of high school students who graduate with computer literacy skills and obtain a "Computer Driving Permit". Increase in the number of public locations
where individuals and businesses can access and utilize ACS. Increase in the number of residents and businesses utilizing ACS through replication/modification of models. Increase in utilization of e-Health services for improved access to care.

Immediate Actions (First Year)	**Short Term Actions** (2-3 Years)	**Intermediate Actions** (4-6 Years)	**Long-Term Actions** (7-10 Years)	**Responsible Implementer**
Goal 1: Expedite the provision of advanced communications services (ACS) access in all areas of the San Joaquin Valley. **Metric(s)**: Objective A: Number of state agencies, boards and commissions with goals, objectives, and strategies for expansion of ACS access in place for internal and client use. Objective B: Number of local communities with adopted ACS access policies in place. Objective C: Development of an integrated and easy-to-update GIS mapping system depicting availability of "affordable" ACS. Objective D: Appropriate re-classification of areas within the region as rural and remote rural. Number of communities awarded assistance and demonstrating access progress. Objective E: Utilizing GIS mapping system from Goal #1, Objective C, document improvement to baseline in subscription to ACS. Objective F: Additional modes of transmission are in use. Objective G: Cases of installation barriers will diminish over time. Objective H: RTIGB funds are fully expended. Objective I: While respecting the need for reserves, a decrease in unused bandwidth can be documented and new user partnerships cited. Objective J: Inclusion of ACS infrastructure within new commercial and residential construction will be a customary part of the "wiring" package.				
Objective A: Raise the profile of access to ACS as a fundamental and necessary service for all residents and businesses.				
Development by the Governor of an Executive Order or statute for a state ACS strategy.	Identification of all existing limitations and barriers to statewide deployment and development of specific strategies appropriate to each agency, board and commission and creation of a statewide set of indicators to monitor progress. First release of statewide ACS access indicator report.	Creation and implementation of programs, including incentive-based initiatives to support statewide access, especially in underserved areas.	Repeat of indicator report release, evaluation of progress, and course correction, as appropriate.	Office of the Governor with support from the CA Public Utilities Commission (CPUC) and the Regional Advanced Communications Services Office (RACSO)

Objective B: Enable local elected officials to better understand the benefits of ubiquitous access to ACS and enable them with the tools to help facilitate deployment.				
Development of an ACS primer for elected officials and staff.	Through local government organizations, distribute primer to local government elected officials and staff and offer educational opportunities to deepen understanding of the importance of ACS to all residents.	Development and use of indicators to measure the impact of access to local and regional economies.	Creation of clearinghouse and community mentoring and exchange programs to promote best practices.	CPUC in partnership with CA School Boards Association (CSBA), CA State Association of Counties (CSAC), League of CA Cities (LCC), CA Cities, County, School Partnership (CCS) with support from providers and the RACSO
Objective C: Identify communities/pockets/neighborhoods without "affordable" connections to delivery of ACS.				
Development of base map and integration of currently available information.	Creation of survey tool, administration of survey within the San Joaquin Valley, and integration of information into mapping system.	Identification of strategies to address to increase penetration and recommendations for concentration of efforts.	Continued refinement of map and integration with economic impact information.	CPUC in conjunction with CA Emerging Technology Fund (CETF) and in partnership wit economic development agencies and providers, Corporation for Education Network Initiatives in CA (CENIC) and the RACSO
Objective D: Increase delivery of "affordable" ACS in rural and other underserved areas.				
Development of Technology Opportunity Zone (TOZ) concept and award criteria.	1. Develop criteria for rural and remote rural classifications. 2. Designation of a pilot TOZ, awarding of funding, and establishment of progress evaluation mechanisms.	1. Apply labels and integrate classifications into GIS mapping system. Develop access strategies appropriate to both classifications. 2. Initial assessment and new awards for TOZ program.	Identification of sustaining partners for TOZ program.	1. CPUC and CETF with support from provider 2. CPUC and CETF in conjunction with the RACSO
Objective E: Increase deployment of ACS by current and potential service providers.				
Convene a task force of representatives from the Governor's office, CETF, CPUC, CSBA, CSAC, LCC and providers to develop action items to increase deployment (Deployment Task Force).	Begin implementation process for action items.	Evaluate progress by evaluating improvement to baseline. Issue *Advanced Communications Services Deployment in California: A Five Year Progress Report.*	Issue the *Advanced Communications Services Deployment in California: A Ten Year Progress Report* to document progress and remaining challenges.	CPUC and CETF in conjunction with CSAC, CSBA, LCC, providers, and the RACSO
Objective F: Increase deployment through wired, fixed wireless, wireless and other available technologies.				
Minimize regulatory barriers to emerging technologies similar to the recent action by the CPUC regarding Broadband Over Power Lines (BPL).	Structure a regulatory climate that encourages innovative technology development, testing, and implementation.	Explore incentives that promote the San Joaquin Valley as a prime location for ACS technology research, development and deployment.	Incentives for additional R&D aimed at hard-to-serve communities and regions will be targeted for additional research.	CPUC and CETF in conjunction with the Governor's office and the RACSO

Objective G: Eliminate installation barriers that discourage deployment.				
Include responsibility for addressing this issue in the work of the Deployment Task Force referenced in Goal #1, Objective E.	Begin implementation process for action items.	Evaluate progress by evaluating improvement to baseline.	Assess benefit of regulatory changes to address remaining barriers.	CPUC in conjunction with the Deployment Task Force recommended in Goal #1, Objective E and the RACSO
Objective H: Assure all available funding for deployment of ACS is utilized. (See work group report for details)				
Eliminate current restrictions of the Rural Telecommunications Infrastructure Grant Program through legislative amendments as follows: 1) Extend the program through at least 2015 2) Reserve $2.5 million for smaller projects and make $7.5 million available for larger projects 3) Allow non-awarded funding to carry forward to future years to increase the opportunities to fund worthwhile projects.	Evaluate the effect these changes have on utilization of funds.	Track success of fund recipients and make recommendations to the legislature, as needed, to further refine the program.	Appropriate recommendations to the legislature will be developed by the CPUC prior to fund's new sunset date.	CA State Legislature supported by CPUC and RACSO
Objective I: Leverage unused bandwidth for the benefit of the greatest number of users.				
In cooperation with CENIC and the Broadband Institute of California (BBIC), develop a best practices and case studies guidebook for implementation.	Organize a formal advisory group of the CPUC, BBIC, CENIC, and the RACSO to interface with the Federal Communication Commission on efforts to leverage spectrum. Work with others to develop initiatives to incentivize implementation.	Utilizing the GIS mapping system referenced in Goal #1, Objective C, map successful implementation sites.	Working with providers, evaluate the effect these initiatives have on deployment and subscription, especially in hard-to-serve areas.	CPUC and CETF in conjunction with CENIC, BBIC, providers and the RACSO

Objective J: Equip all new development with ACS accessibility.				
Working with the California Building Industry Association (BIA), develop recommendations to encourage "ACS ready" construction.	Working with the U.S. Department of Housing and Urban Development, develop strategies to encourage "ACS ready" construction in affordable and "special population" housing. Utilizing CSAC, LCC, and planning organizations, develop local model zoning and building codes that can support "ACS ready" strategies.	In conjunction with industry representatives, develop an educational outreach program to increase consumer awareness of the benefits of "ACS ready" construction.	Utilizing the GIS mapping system referenced in Goal #1, Objective C, create a layer to map progress in adoption of "ACS ready" policies and actual "ACS ready" sites.	The CA State Legislature with support from the BIA, CPUC, CSAC, LCC, the telecommunicatio industry, and the RACSO

Goal 2: Promote greater utilization of ACS in targeted populations and communities that currently trail the state average. **Metric:** Objective A**:** The CETF Board of Directors will allocate funds for adoption of broadband and education components. Objective B: Access to and use of ACS will increas because of the efforts of local elected officials. Objective C: High school students will graduate with computer literacy skills and will obtain a "Computer Driving Permit." Objective D: The number of public locations where individuals and businesses can access and utilize ACS will increase.				
Objective A: Increase utilization of ACS by all residents.				
Set aside a portion of the CETF annual awards for projects that are aimed at, or integrate with a deployment proposal, increased adoption and education of residents in the benefits of high speed Internet use and/or instruction in its use.	Develop parameters for adoption and education awards.	Sponsor regional forums to encourage networking of award recipients, highlight best practices and successful new models and garner input on additional needs to improve ACS adoption.	Evaluate gaps in adoption in areas with ACS access and target and tailor new awards towards these populations.	The CETF, CPUC, and the RACSO
Objective B: Improve local elected officials' understanding of the importance of every facet of access for all residents and businesses they serve.				
Convene organizations, agencies, departments, decision-makers and other relevant groups to focus on the importance of access to ACS in helping to address the needs of all residents, with a special focus on disadvantaged groups.	Solicit research proposals and fund development of credible data. Develop methods for addressing these findings including promoting awareness among local elected officials of the connection between ubiquitous access and quality of life issues within communities.	Determine if and how funding can assist in implementation of strategies to develop access initiatives driven by local elected officials.	Assess additional methods for increasing the role of local government in assisting ubiquitous access and integrating it into their community plans as essential infrastructure.	The CPUC, Board of Directors of the CETF, state, federal, local agencies, and the RACSO
Objective C: Equip all high school graduates with the basic computer skills necessary to perform in today's job market.				
Identify a task force to develop high school computer literacy standards. Identify appropriate champions of the effort to advocate for implementation.	Working with literacy champions, engage stakeholders in a consensus-building process around the importance of high school computer literacy standards. Develop the standards.	Working with the private sector, develop a companion program to International Computer Driving License US (ICDLUS) for high school students, i.e., International Computer Driving Permit US (ICDPUS).	Reconvene stakeholders to determine the feasibility of, and need for, extending the program to the junior high level. Develop and implement as appropriate.	CPUC with support from California Department of Education, CSBA, CENIC, the private sector, and the RACSO

Objective D: Expand the number of public locations for access to ACS to help accommodate residents and businesses unable to provide themselves with private access.				
Drafting and approval of legislation to amend SB 720 as stated in work group report.	Amendment of The Teleconnect Fund to reflect the legislative language. Raised awareness of changes through outreach activities.	Projects awarded under the new parameters will be evaluated for effectiveness and appropriate recommendations made to the legislature.	Conduct outreach forums to solicit applications and application partners in underserved areas where insufficient capacity prevents potential applicants from advocating on their own behalf.	The State Legislature, CPUC, and RACSO

Goal 3: Enhance proliferation of successful ACS implementation, access, and use models. **Metric(s):** Increase in the number of residents and businesses utilizing ACS through replication/modification of models.				
Objective A: Increase public access and community development, and identify and/or create business services that can be used to strengthen and grow home-based businesses in underserved and disadvantaged areas in order to increase the demand side of ACS access through growing small businesses, generating jobs, and thereby increasing wealth.				
Develop a clearinghouse of programs and projects with documented success that has been sustained over a period of time.	Utilizing existing forums and events, educate decision-makers about available models. Continue to update the clearinghouse.	Evaluate gaps in ubiquitous access and use to determine whether there are gaps in implementing best practices or unique situations necessitating creation of new models.	Working with industry representatives and foundations, develop a resource strategy to fund deployment of custom models for under/unserved populations and locations.	CETF, CPUC, representatives of "best practice" projects and programs, and RACSO
Goal 4: Utilize eHealth tools to improve access to state-of-the-art health care and healthcare services. **Metric(s):** Utilized eHealth services for improved access to care.				
Objective A: Improve the current and future health of residents by utilizing ACS to enable them to benefit from health care advances regardless of their proximity to services, mobility, or economic status.				
Work with the California Telemedicine and eHealth Center to develop the scope, priority, and implementation timeline for ACS recommendations that promote availability of and access to eHealth within the region.	Identify resources to expand and maintain eHealth networks within the region. Develop a strategy to implement Electronic Health Records (EHRs).	Develop provisions within the eHealth strategy for the region to target communities that include a mobile agricultural workforce. Develop IT curriculum specific to eHealth needs.	Fully integrate appropriate IT skill sets into the education and training of health practitioners.	CPUC in conjunction with the California Telemedicine and eHealth Center and RACSO

IV. Resources for Implementation

A. Existing Resources

Several groups and organizations have identified the need for universal access to ACS in all of California in order to match the kind of commitment being made in other states and nations. California's competitive advantage is quickly eroded if the current and potential workforce is unable to compete within the global information and communication economy.

Based on work done to increase the use of technology in the Great Central Valley of California (Redding to Bakersfield), the Great Valley Center began to call for universal access as early as 2003. In August of 2004, GVC hosted a summit of providers, rural representatives and regulators, and developed a set of recommendations for state and federal actions that have been referred to by both the California Public Utilities Commission and to the Federal Communications Commission. These recommendations are now part of the CPUC record and were considered in the report, "Broadband Deployment in California" issued by the Commission in May of 2005. In late 2004 and early 2005, the California Center for Regional Leadership facilitated Rural Economic Vitality Conversations in eleven locations throughout the state, including in the Valley, and the need for ACS access was a consistent priority during those meetings.

In May of 2005, Secretaries Sunne Wright McPeak and Victoria Bradshaw invited rural economic development and civic organizations to create an ad hoc task force, headed by Barbara Johnston of the California Telemedicine and eHealth Center, to develop a conceptual proposal for the implementation of ACS in rural areas, using telemedicine and eHealth as the pathfinder application. The task force produced and submitted a proposal, *A Strategy to Develop a Statewide eHealth Network,* which when implemented will ensure access to health services via broadband throughout rural California. It is noted in the concluding section of the proposal, "While the short-term focus of the strategy is the development of a Statewide Network for healthcare delivery; the long-term gains will be substantially increased by ensuring this network is used to promote economic vitality for many other purposes, including but not limited to business and economic development, agriculture, and education."

B. Additional Resources

The California Public Utilities Commission (PUC) established the California Emerging Technology Fund (CETF) following the Commission's November 2005 approval of the mergers between SBC and AT&T and between Verizon and MCI in California. The CETF was created to help achieve ubiquitous access to broadband and advanced services in California through the use of emerging technologies by the year 2010. As the CETF will focus a significant amount of its resources on the needs of underserved communities and bridging the Digital Divide it is an appropriate funding opportunity for consideration in implementing the telecommunication recommendations. Initial funding will be provided by the merging companies for a total initial endowment of $60 million over five years.

Corporate foundations are another resource especially applicable to ACS pilot projects. For example, the AT&T Foundation is currently funding Pixley Connect, a project targeted at providing and increasing demand for ACS in the small, rural community of Pixley. Additional grants from this

foundation and others can play a role in providing resources to support future pilot projects throughout the region.

The opportunity for incorporating ACS accessibility into new development holds tremendous potential within a region predicted to continue experiencing unprecedented growth. While not without costs, the expense associated with including ACS accessibility in the design and build phases of new construction makes good fiscal sense compared with the costs of retrofitting individual units. Additional costs would be passed on to the consumer and therefore the ultimate user of the services.

Finally, advances in technology and ever-emerging creative partnerships will assist in bridging the Digital Divide. However, supplemental resources and new models will continue to be required to address the needs of those who are the least likely to be "connected" to the advantages offered through ACS.

V. Status Report

Please reference goal and objective descriptions in Section III for context.

- Goal 1, Objective A: No action has been taken.
- Goal 1, Objective B: As this is a new recommendation, no action has been taken.
- Goal 1, Objective C: Anecdotal information is available, but there is no comprehensive inventory at this time.
- Goal 1, Objective D: As these are new recommendations, no action has been taken.
- Goal 1, Objective E: As this is a new recommendation, no action has been taken.
- Goal 1, Objective F: Some work has been done by the CPUC as demonstrated by their recent action on BPL.
- Goal 1, Objective G: Some work has been done by the CPUC and has been attempted through legislation proposed by various interest groups.
- Goal 1, Objective H: This is supported by the CPUC. Advocates from the legislature have yet to be identified.
- Goal 1, Objective I: As this is a new recommendation, no action has been taken.
- Goal 1, Objective J: The equipment of new development with ACS accessibility is being implemented as an option in very limited sites.
- Goal 2, Objective A: At press time, the CETF had not developed guidelines for granting.
- Goal 2, Objective B: As this is a new recommendation, no action has been taken.
- Goal 2, Objective C: Literacy standards have been developed for post-secondary level.
- Goal 2, Objective D: Some attempts to alter the language have failed because of the scope of the changes. Advocates exist to attempt new language.
- Goal 3, Objective A: No comprehensive clearinghouse exists. Connecting Stanislaus is still successful and operational, but is looking for supplemental funding. Pixley Connect has recently been funded by AT&T. A proposal has been submitted to AT&T for Mariposa *BOSS*, but a funding decision has not yet been rendered on the project.
- Goal 4, Objective A: Numerous eHealth initiatives exist across the state and the nation.

VI. Attachments

A. Background Resources

Attachment A: Background Resources

Availability of Advanced Telecommunications Capability in the United States, Federal Communications Commission, September 2004

Broadband Deployment in California, California Public Utilities Commission, May 2005

Status Paper – Broadband Report Recommendations, May 2006

AB 2987 Matrix

Rural Highspeed Access – Obstacles & Opportunities, Great Valley Center, August 2004

TechNet Comments to CPUC, February 2005

Sample information from State of Michigan Broadband Development Authority

Colorado's Multi-Use Network – Bridging the Rural and Urban Digital Divide Executive Summary

Measuring Broadband's Economic Impact: Prepared for the U.S. Department of Commerce, Economic Development Administration, February 2006

Sample Web-based Toolkit; Lonestar Broadband: Connectivity toolkit for underserved Texas communities

On the road to a GIGABIT BROADBAND; Are we there yet? CENIC, May 2005

The State Broadband Index: An assessment of State Policies Impacting Broadband Deployment and Demand, TechNet, 2002

Aggregation of Telecommunications Demand, University of Pittsburgh, September 2001

Embracing Broadband as a Builder, excerpt from TecHome Builder: The Builder's Guide to Technology

Local Government Broadband Initiative, Massachusetts Institute of Technology Program on Internet and Telecoms Convergence, September 2003

International Computer Driving License and *Tech Ready Assessment*

Summary papers: Stanislaus County – Connecting Stanislaus Initiative; Great Valley Center – Central Valley Digital Network; Pixley Connect; Mariposa BOSS

eHealth and the Central Valley: Growth Opportunities for California's Rural Regions, submitted by California Telemedicine and eHealth Center

Deploying Ubiquitous Broadband in Rural California to Enhance Economic Development, Education and Healthcare – A Strategy to Develop a Statewide eHealth Network, CTECT, September 2005

California Telemedicine & eHealth Center 2005 Annual Report – Status of eHealth in California, CTEC, December 2005